Amendments to the Specification:

Please replace the Brief Discussion of the Drawings with the following amended paragraphs:

~~Figure 1A is a schematic diagram providing the amino acid sequence of HDAC-1, as provided in GenBank Accession No. AAC50475 (SEQ ID NO:1).~~

~~Figure 1B is a schematic diagram providing the nucleic acid sequence of HDAC-1, as provided in GenBank Accession No. U50079 (SEQ ID NO:2).~~

~~Figure 2A is a schematic diagram providing the amino acid sequence of HDAC-2, as provided in GenBank Accession No. AAC50814 (SEQ ID NO:3).~~

~~Figure 2B is a schematic diagram providing the nucleic acid sequence of HDAC-2, a provided in GenBank Accession No. U31814 (SEQ ID NO:4).~~

~~Figure 3A is a schematic diagram providing the amino acid sequence of HDAC-3, as provided in GenBank Accession No. AAB88241 (SEQ ID NO:5).~~

~~Figure 3B is a schematic diagram providing the nucleic acid sequence of HDAC-3, a provided in GenBank Accession No. U75697 (SEQ ID NO:6).~~

~~Figure 4A is a schematic diagram providing the amino acid sequence of HDAC-4, as provided in GenBank Accession No. BAA22957 (SEQ ID NO:7).~~

~~Figure 4B is a schematic diagram providing the nucleic acid sequence of HDAC-4, as provided in GenBank Accession No. AB006626 (SEQ ID NO:8).~~

~~Figure 5A is a schematic diagram providing the amino acid sequence of HDAC-5, as provided in GenBank Accession No. BAA25526 (SEQ ID NO:9).~~

~~Figure 5B is a schematic diagram providing the nucleic acid sequence of HDAC-5, as provided in GenBank Accession No. AB011172 (SEQ ID NO:10).~~

~~Figure 6A is a schematic diagram providing the amino acid sequence of human HDAC-6, as provided in GenBank Accession No. AAD29048 (SEQ ID NO:11).~~

~~Figure 6B is a schematic diagram providing the nucleic acid sequence of human HDAC-6, as provided in GenBank Accession No. AJ011972 (SEQ ID NO:12).~~

~~Figure 7A is a schematic diagram providing the amino acid sequence of human HDAC-7, as provided in GenBank Accession No. AAF63491.1 (SEQ ID NO:13).~~

~~Figure 7B is a schematic diagram providing the nucleic acid sequence of human HDAC-7, as provided in GenBank Accession No. AF239243 (SEQ ID NO:14).~~

~~Figure 8A is a schematic diagram providing the amino acid sequence of human HDAC-8, as provided in GenBank Accession No. AAF73076.1 (SEQ ID NO:15).~~

~~Figure 8B is a schematic diagram providing the nucleic acid sequence of human HDAC-8, as provided in GenBank Accession No. AF230097 (SEQ ID NO:16).~~

Figure 1A ~~9A~~ is a representation of a Northern blot demonstrating the effect of HDAC-1 AS1 antisense oligonucleotide on HDAC-1 mRNA expression in human A549 cells.

Figure 1B ~~9A~~ is a representation of a Northern blot demonstrating the effect of HDAC-2 AS antisense oligonucleotide on HDAC-2 mRNA expression in human A549 cells.

Figure 1C ~~9C~~ is a representation of a Northern blot demonstrating the effect of HDAC-6 AS antisense oligonucleotide on HDAC-6 mRNA expression in human A549 cells.

Figure 1D ~~9D~~ is a representation of a Northern blot demonstrating the effect of HDAC-3 AS antisense oligonucleotide on HDAC-3 mRNA expression in human A549 cells.

Figure 1E ~~9E~~ is a representation of a Northern blot demonstrating the effect of an HDAC-4 antisense oligonucleotide (AS1) on HDAC-4 mRNA expression in human A549 cells.

Figure 1F ~~9F~~ is a representation of a Northern blot demonstrating the dose-dependent effect of an HDAC-4 antisense oligonucleotide (AS2) on HDAC-4 mRNA expression in human A549 cells.

Figure 1G ~~9G~~ is a representation of a Northern blot demonstrating the effect of an HDAC-5 antisense oligonucleotide (AS) on HDAC-5 mRNA expression in human A549 cells.

Figure 1H ~~9H~~ is a representation of a Northern blot demonstrating the effect of an HDAC-7 antisense oligonucleotide (AS) on HDAC-7 mRNA expression in human A549 cells.

Figure 1I ~~9I~~ is a representation of a Northern blot demonstrating the dose-dependent effect of HDAC-8 antisense oligonucleotide (AS1 and AS2) on HDAC-8 mRNA expression in human A549 cells.

Figure 2A ~~10A~~ is a representation of a Western blot demonstrating the effect of HDAC isotype-specific antisense oligos on HDAC isotype protein expression in human A549 cells.

Figure 2B ~~10B~~ is a representation of a Western blot demonstrating the does-dependent effect of the HDAC-1 isotype-specific antisense oligo (AS1 and AS2) on HDAC isotype protein expression in human A549 cells.

Figure 2C ~~10C~~ is a representation of a Western blot demonstrating the effect of HDAC-4 isotype-specific antisense oligonucleotide (AS2) on HDAC isotype protein expression in human A549 cells.

Figure 3 ~~11A~~ is a graphic representation demonstrating the apoptotic effect of HDAC isotype-specific antisense oligos on human A549 cancer cells.

Figure 4A ~~12A~~ is a graphic representation demonstrating the effect of HDAC-1 AS1 and AS2 antisense oligonucleotides on the proliferation of human A549 cancer cells.

Figure 4B ~~12B~~ is a graphic representation demonstrating the effect of HDAC-8 specific AS1 and AS2 antisense oligonucleotides on the proliferation of human A549 cancer cells.

Figure 5 ~~13~~ is a [[a]] graphic representation demonstrating the cell cycle blocking effect of HDAC specific antisense oligonucleotides on human A549 cancer cells.

Figure 6 ~~14~~ is a representation of an RNAse protection assay demonstrating the effect of HDAC isotype-specific antisense oligonucleotides on HDAC isotype mRNA expression in human A549 cells.

Figure 7 ~~15~~ is a representation of a Western blot demonstrating that treatment of human A549 cells with HDAC-4 AS1 antisense oligonucleotide induces the expression of the p21 protein.

Figure 8 ~~16~~ is a representation of a Western blot demonstrating that treatment of human A549 cells with HDAC-1 antisense oligonucleotides (AS1 and AS2) represses the expression of the cyclin B1 and cyclin A genes.

Figures 9A and 9B ~~Figure 17~~ show ~~shows~~ plating data demonstrating the ability of antisense oligonucleotides complementary to HDAC-1 to inhibit growth in soft agar of A549 cells far more than can antisense oligonucleotides complementary to HDAC-2, HDAC-6 or mismatched controls.

Please replace paragraph [0085] of the specification as published with the following amended paragraph:

Particularly preferred non-limiting examples of antisense oligonucleotides of the invention are complementary to regions of RNA or double-stranded DNA encoding a histone deacetylase isoform (e.g., HDAC-1, HDAC-2, HDAC-3, HDAC-4, HDAC-5, HDAC-6, HDAC-7 or HDAC-8). (see *e.g.*, GenBank Accession No. U50079 for human HDAC-1 ~~(Fig. 1B)~~; GenBank Accession No. U31814 for human HDAC-2 ~~(Fig. 2B)~~ GenBank Accession No. U75697 for human HDAC-3 ~~(Fig. 3B~~; GenBank Accession No. AB006626 for human HDAC-4 ~~(Fig. 4B)~~; GenBank Accession No. AB011172 for human HDAC-5 ~~(Fig. 5)~~; GenBank Accession No. AJ011972 for human HDAC06 ~~(Fig. 6B)~~; GenBank Accession No. AF239243 for human HDAC-7 ~~(Fig. 7B)~~; and GenBank Accession No. AF230097 for human HDAC-8 ~~(Fig. 8B)~~).

Please replace paragraph [0131] of the specification as published with the following amended paragraph:

Figures ~~9A-9I~~ 1A-1I present results of experiments conducted with HDAC-1 (Figure 1A ~~9A~~). HDAC-2 (Figure 1B ~~9B~~), HDAC-6 (Figure 1C ~~9C~~), HDAC-3 (Figure 1D ~~9D~~), HDAC-4 (Figures 1E ~~9E~~ and 1F ~~9F~~), HDAC-5 (Figure 1G ~~9G~~), HDAC-7 (Figure 1H ~~9H~~), and HDAC-8 (Figure 1I ~~9I~~) AS ODNs.

Please replace paragraph [0135] of the specification as published with the following amended paragraph:

As shown in Figure 2A ~~10A~~, the treatment of cells with HDAC-1, HDAC-2, HDAC-3, HDAC-4 or HDAC-6 ODNs for 48 hours specifically inhibits the expression of the respective HDAC isotype protein. Figure 2B ~~10B~~ presents dose dependent response for the inhibited expression of HDAC-1 protein in cells treated with two HDAC-1 AS ODNs. As predicted, treatment of cells with the respective mismatch (MM) control oligonucleotide does not result in a significant decrease in HDAC-1 protein expression in the treated cells.

Please replace paragraph [0141] of the specification as published with the following amended paragraph:

Results of the study are shown in Figures 3-5 ~~11-13~~, and in Table 3 and Table 4. Treatment of human cancer cells by HDAC-4 AS, and to a lesser extent, HDAC 1 AS, induces growth arrest and apoptosis of various human cancer. The corresponding mismatches have no effect. The effects of HDAC-4 AS or HDAC-1 AS on growth inhibition and apoptosis are significantly reduced in human normal cells. In contrast to the effect of HDAC-4 or HDAC-1 AS oligos, treatment with human HDAC-3 and HDAC-6 OSDNs has no effect on cancer cell growth or apoptosis, and treatment with human HDAC-2 OSDN has a minimal effect on cancer cell growth inhibition. Since T24 cells are p53 null and A549 cells have functional p53 protein, this induction of apoptosis is independent of p53 activity.

Please replace paragraph [0145] of the specification as published with the following amended paragraph:

The results are shown in Figures 6, 7 ~~14, 15~~ and Table 5.

Please replace paragraph [0147] of the specification as published with the following amended paragraph:

Experiments were also conducted to examine the affect of HDAC antisense oligonucleotides on HDAC protein expression. In A549 cells, treatment with HDAC-4 antisense oligonucleotides results in a dramatic increase in the level of p21 protein (Figure 7 ~~15~~).

Please replace paragraph [0149] of the specification as published with the following amended paragraph:

1.3g granulated agar (DIDFCO) was added to 100 ml deionized water and boiled in a microwave to sterilize. The boiled agar was held at 55C until further use. Iscove's Modified Dulbecco's Medium (GIBCO/BRL), 100x Penicillin-Streptomycin-Glutamine (GIBCO/BRL) and fetal bovine serum (medicorp) were pre-warmed at 37C. To 50 ml sterile tubes was added 9 ml ~~Isove's~~ Iscove's medium, 2 ml fetal bovine serum and 0.2 ml 100x Pen-Strep-Gln. Then 9 ml 55C 1.3% agar was added to each tube. The tube contents were mixed immediately, avoiding air bubbles, and 2.5 ml of the mixture was poured into each sterile 6 cm petri dish to form a polymerized bottom layer. Dishes with polymerized bottom layers were then put in a CO2

incubator at 37C until further use. In 50 ml sterile tubes were prewarmed at 37C for each 4 cell lines/samples, 20ml Iscove's medium, 0.4 ml 100x Pen-Strep-Gln and 8 ml fetal bovine serum. Cells were trypsinized and counted by trypan blue staining and 20,000 cells were aliquotted into a sterile 15 ml. tube. To the tube was then added DMEM with low glucose (GIBCO/BRL) + 10% fetal bovine serum + Pen-Strep-Gln to a final volume of 1 ml. To the prewarmed 37C mix in the 50 ml tube was quickly added 8 ml 55C 1.3% agar, which was then mixed well. Nine ml of the mixture was then aliquotted to each 1 ml cells in the 15 ml tube which is them mixed and 5 ml aliquotted onto the polymerized ~~ploymerized~~ bottom layer of the 6 cm culture plates and allowed to polymerize at room temperature. After polymerization, 2.5 ml bottom layer mix was gently added over the cell layer. Plates were wrapped up in foil paper and incubated in a CO2 incubator at 37°C for three weeks, at which time colonies in agar are counted. The results are shown in Figure 9 ~~17~~.